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(54) CERAMIC COATING MATERIAL, ITS PRODUCTION AND HIGH TEMPERATURE MEMBER USING THE SAME MATERIAL

(57)Abstract:

PROBLEM TO BE SOLVED: To easily form a ceramic coating layer composed of rare earth metal oxide having excellent characteristics on the surface of a metallic material formed body by heating a formed body composed of a mixture of high m.p. metal and rare earth metal to a specified temp., vapor-depositing the rare earth metal on the surface of the metallic formed body and executing oxidation.

SOLUTION: A granular mixture of high m.p. metal such as W, Mo, Ta, Nb or the like and rare earth metal of 5 to 30%, by volume is formed into a crucible, wire rod or the like. This formed body is used as a cathode, arc discharge is generated between it and an anode, heating is executed to a temp. lower than the m.p. of the high m.p. metal and more than that of the rare earth metal or the oxide thereof to vapor-deposit the rare earth metal on the surface of the formed body, and oxidation is executed in the air to form a ceramic-coated layer composed of rare earth metal oxide on the surface of the formed body by the high m.p. metal. The ceramic coating metallic material excellent in adhesion and homogeneity and further excellent in corrosion-resistance, arc resistance and thermoelectron releasability by the molten metal can be obtd.

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